AN ANALYSIS OF THE EFFECT OF GOVERNMENT EXPENDITURE ON GROSS DOMESTIC PRIVATE INVESTMENT IN NIGERIA 1975-2009

Nasir Mukhtar Gatawa, PhD

Muhammad Zayyanu Bello, Bsc(ed), Msc.

Department of Economics, Faculty of Social Sciences Usmanu Danfodiyo University Sokoto

Abstract

The paper analyses the effect of government expenditure on gross domestic private investment in Nigeria using time series annual data for 34 years. Multiple regression and cointegration methods were used to analyse the data. Result of the analysed data revealed that the actual impact of government expenditure on private investment varies depending on the type of expenditure under consideration. The negative relationship established that the federal government recurrent expenditure crowded out or substituted for private investment in the period under study. Furthermore, the study revealed a positive effect of inflation rate on private investment. The analysis suggests that government should give more priorities to expenditures that compliment private investment rather than spending on expenditures that substitute for private investment.

Keywords: Private Investment, government expenditure

Introduction

The interest of economists in the relationship between government spending and private investment is motivated mainly by the controversy over the crowding out or crowding in effect of government spending on private investment. With the renewed interest in the role of the private sector as an engine of economic growth, the examination of this relationship is given further impetus. The idea of a private sector led economic growth in Nigeria is therefore traceable to the observed success of the major industrialized countries; which attributed to the resilience of their organized private sector.

As a result of the poor performance of the economy over the period in which government played the leading role in the economy, there was a change in the expected role of the government. To this end, market oriented structural reform programmes such as privatization; deregulation and liberalization were adopted to ensure a reduction in the role of government in the economy. The guiding principle in this redefined role of government was that government should concentrate its resources in areas that compliments rather than crowd-out private sector investment, thereby creating an enabling environment for the private sector investment.

To address the inefficiencies in public expenditure management in Nigeria, the federal government introducedwide range of policies and institutional reforms, geared towards privatizing the economy, particularly since 1986 when the structural adjustment program (SAP) was introduced.The national economic empowerment and development strategy (NEEDS) was launched for the period (2004-2007) in Nigeria which emphasized on the evolution of a private sector led market oriented economy with competition as a driving force. The key elements of this strategy include privatization, deregulation, liberalization and reducing the influence and involvement of government in the economy.

The Nigerian economy is a mixed system in which the government and the private sector co-exist. The two could play complimentary roles to enhance economic growth. Thus, it is in line with this that the use of government expenditure to enhance private investment is being advocated.

However, as Aschaver (1989a) noted, the precise effect of government expenditure on private investment depends on the type of government expenditure being considered. Certain categories of government expenditure crowd out private investment while others complement or crowd-in private investment.This study therefore used a time series data set on Nigeria for the period 1975-2009 to examine the impact of federal government expenditure on private investment in the economy.

1.1 Statement of the problem

The failure of the government to achieve rapid and sustained economic growth of the Nigerian economy spurred the debate on whether the government or the private sector should spearhead the nation's economic growth process. In the five decades of her post-independent era, the government dominated the economic activities of the country with tremendous increases in its expenditure. For example, federal government expenditure as a percentage of GDP increased by 220.6% between 1975 and 2005. (CBN, Statistical Bulletin, 2009).

In Nigeria, private investment has been persistently low, recording less than 6% growth rate since 1970 (Chibber and Palwa, 1994). It was identified that this low performance of private investment is a factor responsible for the low growth rate of Nigeria's Gross Domestic Product (GDP).The ratio of domestic investment to GDP in 2005 was only 21 percent. (World Bank; World Development Indicators).

Private sector operators argued that the factors which militate against their contributions to the economy include high cost of doing business, unstable macroeconomic policies, infrastructural bottlenecks, faltering consumer spending, lack of capital investment and stifling effect of multiplicity of taxes. The very low productivity/uncompetitivenes of the private sector is therefore as a result of the hostile business environment. In view of the above trends in government spending and private investment in Nigeria, The following questions became relevant for investigation; did government expenditure crowd in or crowd out private investment in Nigeria over the period under study? What categories of government expenditure complement private investment and which had crowding out effects?

Hypotheses of the study

The hypotheses in this study were stated in null perspectives.

H_{01}: That there is no significant relationship between federal government expenditure and gross domestic private investment in Nigeria.

$H_0$2: That all other independent variables captured in the model do not influence private investment.

The scope of this study is limited to an empirical analysis of the effects of federal government expenditure on private investment between 1975 and 2009. The major focus is on the effects of government expenditure, and other determinants of investment. The choice of this study period is based on the availability of data.

2.Theoretical Framework and Review of Literature

The evolution of investment theory has its origin from Keynes' (1936) path breaking work. Keynes argued that investment depends to a large extent on the prospective Marginal Efficiency of Capital, relative to interest rate which is the opportunity cost of capital. He stresses the volatility of private investment given that investors cannot predict for a certainty the returns on investment. This collaborates with the views of both Keynesian and neoclassical model of investment.

Subsequent theories of investment after Keynes were basically growth models. This growth models gained currency in the 1960s. One of the most important is the Accelerator Theory which argues that investment is a linear proportion of changes in output. Jorgenson (1967) and (1971) and Hall (1977) as cited in Mamatzakis (1994) reviewed the restrictive assumptions of the accelerator theory and formulated the neoclassical approach. In this approach, optimal capital stock is a function of the level of output and user cost of capital. These works serve as the bases for the theories to be reviewed in this work.

2.1 Keynesian Theory of Investment

The theories of investment date back to Keynes (1936), who first called attention to the existence of an independent investment, function in the economy. A central feature of the Keynesian analysis is the observation that although savings and investment must be identical ex-post, savings and investment decisions are, in general, taken by different decision makers and there is no reason why ex-ante savings should equal ex-ante investment. The next phase in the evolution of investment theory gave rise to the accelerator theory, which makes investment a linear proportion of changes in output. In the accelerator model, expectations, profitability and capital costs play no role. Keynesians have traditionally favored the accelerator theory of investment while disregarding the role of factor costs that was the beginning of land mark development in the theory of investment. Keynes defined the marginal efficiency of a capital asset as the rate of discount which would make the series of annual returns on investment expected from the capital asset during its life just equal to its supply price (Keynes, 1936).

2.2 Flexible Accelerator Theory of Investment

A more general form of the accelerator model is the flexible accelerator model. The basic notion behind this model is that the larger the gap between the existing capital stock and the desired capital stock, the greater a firm's rate of investment. The hypothesis is that firms plan to close a fraction of the gap between the desired capital stock, **K**, and the actual capital stock, K, in each period. This gives rise to a net investment equation of the form of:

$I = \delta\ (\mathbf{K} - K^{+}_{-1})$

Where I = net investment, K^{+} = desired capital stock,

1_K = last periods capital stock, and δ = partial adjustment coefficient.

Asante (2000), explained that within the frame work of the flexible accelerator model, output, internal funds, cost of external financing and other variables may be included as

determinants of K^+. He noted that flexible accelerator mechanism may be transformed into a theory of investment behavior by adding a specification of K^+ and a theory of replacement investment. Alternative econometric models of investment behavior differ in the determinants of K^+, the characterization of the time structure of the investment process and the treatment of replacement investment. In the flexible accelerator model, K^+ is proportional to output, but in alternative models, K^+ depends on capacity utilization, internal funds, the cost of external finance and other variables.

Mankiw (1992), noted that net investment, depends on the difference between the marginal product of capital and the cost of capital. He further explained that if the marginal product of capital exceeds the cost of capital, firms find it profitable to add to their capital stock. If the marginal product of capital falls short of the cost of capital, they let their capital stock shrink.

2.3 Government Expenditure and Private Investment in Nigeria: A Review of Empirical Literature

Empirical research on the relationship between government spending and private investment mainly aim at rejecting or accepting the crowding out hypothesis. According to Monadjemi (1995), the results of empirical research in this area are, however, controversial. The works of Aschaver (1985), and Monadjemi (1993), provided evidence in support of the substitutability hypothesis. On the other hand, Monadjemi notes that, Aschaver (1989), Eremburg (1993), Karras (1994), were supportive of the complementarily nature of public and private spending.

Monadjemi (1995), examined the relationship between public expenditure and private investment. He based his study on a combination of the neoclassical and the accelerator model of investment. He separated government expenditure into defense spending, government real investment, government consumption expenditure and government social welfare expenditure such as expenditure on education and health as explanatory variables in investment regression model.

Aschauer (1989a), examined the relationship between public capital and private investment in terms of the effect of public spending on private sectors marginal productivity of capital. He categorized government expenditure such as expenditure on roads, education, airports and research. The result shows an increase in private sectors productivity complements public investment expenditure.

Erenburg (1993), examined at the aggregate level the impact of public provision of infrastructure capital on private investment activity directly, finding a positive correlation because private investment activity enhances future growth of real income. This assertion supports complementarily relationship.

Bairam (1990), estimated an investment function and consumption function in which government expenditure was an argument. His study covered twenty African countries for the period 1960-1985. For Nigeria, he found out that there was a positive but insignificant effect of government expenditure on private investment and a negative but significant impact in private consumption.

Ekpo (1995), used the ordinary least squires method and regressed private investment on various categories of public expenditure. The attempt made was to determine the influence of these categories of government expenditure on private investment. The study isolated infrastructure expenditure (which is social services expenditure that does not compete with private investment) from real sector investment expenditure like manufacturing and construction, which compete with private investment. His finding was that social services expenditure crowd – in private investment. However, real sector expenditure on manufacturing and construction crowd – out private investment. Thus he concluded that the private sector is better placed to invest in manufacturing and construction. The government is however still relevant and should provide the social services. The study also found out that expenditure on education and health crowd-in or complements private investment in Nigeria.

Chibber and Pahwa (1994), examined the determinants of the rates of change of private investment in Nigeria using co-integration and error correction model. They found that public investment (public capital stock) has a positive effect on private investment. They thus argued that the private sector benefits not only from the flow of public investment, but also from the stock of roads, power plants, etc. Any change in the public capital would on the average change the supply of services to the private sector, or require the private sector to provide these at its own cost. They concluded that where the government provides such, private investment would be complemented.

Chete and Akpokodje (1997), hypothesized that private investment is influenced by public investment and other factors including inflation, real exchange rate, change in the domestic credit to the private sector and net private foreign capital flow. The result of their empirical analysis showed that public investment crowds – in private investment in Nigeria.

Ekpo (1996), disaggregated public capital expenditure into its various categories and examined the separate effects of each on private investment using ordinary least squire

techniques. The data covered the period from 1960-1992. The estimated results were however mixed. Capital expenditure on transport and communication, agriculture, health and education crowded – in private investment, while construction and manufacturing crowded – out private investment. The results of the estimated coefficients for transport and communication, education and health were found to be positive and statistically significant.

Olaniyan (2000), studied the determinants of private investment in Nigeria between 1970 and 1998 from micro foundations. The result showed that government infrastructure positively affected private investment.

What could be deduced from the review of the various studies above is that the effect of government expenditure on private investment is a subject of controversy. The neoclassical economists oppose government spending from both philosophical point and also due to the crowding –out effect on private spending. Keynesian analysis however stresses the fact of market failure as the basis for government intervention. The various ways government can manipulate economic variables such as the rate of interest and money supply so that government spending have little or no crowding out effect on private spending were also outlined.

3.Methodology

This study made use of secondary data in the analysis.Different data sets were collected from various sources such as (CBN Statistical bulletin published by the central Bank of Nigeria), and Federal Ministry of Finance. These two agencies served as the main sources of data for federal government capital and recurrent expenditures and their various sub-components. Private investment data were sourced from the International Finance Corporation, IMF and CBN Statistical Bulletin. The data covered a period of 34years (1975 - 2009).

In line with the literature, both dependent and independent variables were identified.All the variables used in the analysis were measured in Naira million (₦`million) terms.

Dependent variable

1. Private investment: (i.e Gross domestic investment) is the total change in the value of fixed assets plus change in stocks. Gross capital formation is used as proxy to private investment.

Independent variables

1. Government expenditure: This variable is measured as public expenditure (capital plus recurrent expenditure of the federal government) following the work of Serven (1998) and Monadjemi (1995).
2. Inflation rate: Inflation results from the macroeconomic effect of government spending. The effect of inflation on private investment is also controversial. The Tobin-mundel model posits that a high rate of inflation lowers the real interest rate and thus induces a movement of portfolio from real money balances to real capital. If this holds, then a high rate of inflation is expected to induce higher real investment. On the other hand where the capital and financial markets are under developed, the Tobin mundel effect will not apply. The high rate of inflation induces the movement of portfolio from real money balances to real assets. This means that a high rate of inflation lowers private investment.
3. Economic growth: The gross domestic product GDP is used as proxy for economic growth. This indicates the level of output in the economy. Its rate of growth is therefore an indication of the rate of growth of the economy.
4. The dummy variable: The introduction of the structural adjustment programme in 1986 had as its major policy objective that is a reduction in government participation in the economy, while at the same time giving priority to the private sector to lead in the economic growth process. This called for a substantial reduction in government expenditure and thus a structural break in the economy. The dummy variable $D_,$ in our model captures the effect of structural break as a result of government partial disengagement from the economy.

In determining the effect of government expenditure on private investment in Nigeria, the multiple regression analysis and cointegration methods are used in estimating the parameters of the model. Thus, the estimated coefficients served to indicate the extent of crowding in and crowding out between government expenditure and private investment. SPSS and STATA are used in carrying out the estimation. The SPSS aspect covers the multiple regression analysis were private investment were regress on different categories of government expenditures to identify the categories of government expenditures that compliment private investment and those that had crowding out effect. While the aspect of STATA covers the cointegration analysis that examine the long run relationship between the crowding variables.

In the case of cointegration, recognizing the fact that most macroeconomic data are non stationary, the analysis is preceded by first undertaking a Philips perron unit root test, followed by augmented dickey fuller unit root test and finally the cointegration test. In

addition, some pre and post estimation tests such as: unit root test, Autocorrelation and multicollinearity tests are performed to ascertain that valid models were applied.

Model Specification

This study adopts the model used by Aschauer (1989a), and Ekpo (1996),. All the studies disaggregated government expenditure into its various components and examined their separate effects on private sector investment.

Adopting this pattern therefore, the present study specifies the following models.

$PI_t = \beta_O + \beta_1 GCE_t + \beta_2 GRE_t + \beta_3 InF_t + \beta_4 Y_t + \beta_5 D + \mu_t$ …….

Where; $P_{it}$is the Gross domestic Private investment, β_o is the intercept term, β_1 is the intercept term of the parameters of GCE, GCE_t is Government Capital Expenditure as Percentage of total expenditure,β_2 is the intercept term of the parameters of GRE, GRE_t is Government Recurrent Expenditure as percentage of total expenditure, β_3 is the intercept term of the parameters of INF, INF_t is Inflation rate, β_4 is the intercept term of the parameters of Y, $Y_t$is Economic growth, β_5 is the intercept term of the parameters of D, D is Dummy variable representing the effect of structural break in the economy following the introduction of SAP and μ_t is Error term encompassing all other factors determining private investment but not captured in the model.

4. Results and Discussion of Findings

I. The results of the estimation of equation1 with the data contained in Table 1,2 and 3 were as follows :(see appendix)

Table 4.1: Regression result of the estimate of equation 1.

VARIABLE	*COEFFICIENT*	*STD. ERROR*	*SIGNIFICANT T*
GCE	.540289	0.92843	.0000
GRE	-.030409	.130964	.8180
INF	2308.306660	754.703936	.0047
GDP	.072537	.010450	.0000
POLICY DUMMY	-84900.60596	22527.03709	.0007
CONSTANT	-29227.87399	18584.33484	.1266
R-Squired	.99565		
Adjusted R Squire	.99490		

Durbin Watson	.40306

Table 4.4: Results of stationarity (Philips Perron Unit root) test with the data contain in Table 1, 2, and 3. (see appendix)

VARIABLES	ADF STATISTICS	CRITICAL VALUES	ORDER OF INTEGRATION
RECEX	-17.872 (0.0273)	1%=-3.689 5%=-2.975 10%=-2.619	Stationary at First difference.
CAPEX	-5.297 (0.0000)	1%=-3.696 5%=-2.978 10%=-2.620	Stationary at levels.
GDP	-4.887 (0.0000)	1%=-3.689 5%=-2.975 10%=-2.619	Stationary at First difference.
INF	-3.091 (0.0272)	1%=-3.689 5%=-2.975 10%=-2.619	Stationary at First difference.
GDI	-7.496 (0.0000)	1%=-3.689 5%=-2.975 10%=-2.619	Stationary at First difference.

4.1 *Philips Perron Unit Root Test for Stationarity*

The Philips perron unit root test was used to diagnose the stationarity of the variables in the model. The result established that five series variables are stationary and one other variable is not stationary. Therefore we must find the difference value of the non stationary variable through conducting Augmented Dickey Fuller (ADF) unit root test and see if they are stationary in their first difference values. The Augmented Dickey Fuller unit root tests indicated that the variable capital expenditure which is not stationary in their firstdifference was stationary in their level values. As such, they are integrated of the same order necessitating the conduct of cointegration test.

The result of Philips Perron to a large extent revealed that, for CAPEX, GDI, GDP, DUMMY, and INF. Null hypothesis (H_O) for the existence of non stationarity should be rejected and accept the alternative hypothesis (H_I) that they are stationary because their test

statistics that is MacKinnon values are 0.0273,0.0000,0.0272,0.0000, while in the case of CAPEX null hypothesis (H_O) is accepted and alternative (H_I) is rejected that is non stationary, because their test statistics that is MacKinnon value is 1.0000

4.2 *Cointegration Test*

The first test undertaken before cointegration proper was the test for Philips Perron unit root test, and Augmented Dickey Fuller unit root test. The aim was to test that both variables have the same order of integration that is they are both 1(1). OLS cointegration regression was used to regress the dependent variable on all the cointegrated explanatory variables at their log level values. The null hypothesis (H_O) of no cointegration (the residuals are not stationary that is has unit root) is rejected, and alternative hypothesis (H_I) of cointegration is accepted (That is the presence of long run relationship between the cointegrated variables).

4.3 *Regression Result*

Multiple regression analysis was also used in estimating the parameters of the model. Thus, in the estimated equation 1 the coefficient of capital expenditure is .540289 indicating a positive relationship between capital expenditure and gross domestic private investment. The relationship is significant even at 1% level. The positive sign of the relationship indicates that capital expenditure crowded in private investment over the period of analysis.

The coefficient of recurrent expenditure, measures the effect of recurrent expenditure on private investment. In equation 1, the coefficient of government recurrent expenditure is -.030409 indicating a negative relationship with insignificant t value of .8180 the sign of the coefficient is negative indicating that Federal Government recurrent expenditure crowded out or substituted for private investment over the period under study. That is a 1% increase in recurrent expenditure reduced private investment by .030409.

Furthermore, the effect of inflation on private investment over the period of study is indicated by the coefficient 2308.306660. This shows that inflation rate had a positive effect on private investment. The relationship is significant even at 1% level. The significance of this positive relationship can again be deduced from the t-value which is .0047. That is, the coefficient inflation has a crowding in effect on private investment.

The variable GDP measures the effect of economic growth on private investment. The estimated coefficient for this relationship as indicated in the estimated equation 1 is .072537. These indicate a positive relationship between economic growths on private investment. The relationship is significant even at 1% level as indicated by the significant t value of .0000.

The estimated coefficient for the policy dummy variable D is -84900.60596 indicating a negative relationship between the policy dummy on private investment, but the relationship is significant at 1% level as indicated by the significant t value of .0007. Finally, the coefficient of constant is -29227.87399, negative with insignificant t-value of .1266. This indicates that even all other variables are zero; an increase in government expenditure will reduce investment by 29227.87399

R^2 value is a measure of goodness of fit. That is it is a summary measure that tells how well the sample regression line fits the data. The R^2 value shows the extent to which the variation in GDI is explained by the variation in GCE, GRE, INF, GDP and Policy Dummy. The value of R^2 is .99565. This indicates that 99.6% of the variation in GDI is explained by the variation in our explanatory variables GCE, GRE, INF, GDP and D.

Also, adjusted R^2 value is .99490 corrects for the defects of R^2 as measure of goodness of fit in our regression model. The adjusted R-Squared shows the R squared value even after taking care of other errors in the estimation not captured by the R^2 value. The F statistics is used in the multiple regressions to verify the adequacy of the model.

5. Conclusions and Recommendations

The study used cointegration test and multiple regression analysis to determine the influence of some identified explanatory variables on gross domestic private investment in Nigeria. The study concluded that the result of the analysis confirmed the basic findings of some earlier studies that the actual impact of government expenditure on private sector investment varies depending on the type of government expenditure under consideration.

Given the outcome of this research therefore, the following policy recommendations are proposed:

i. Government should give more priorities to expenditures that compliment (crowd in) private investment: such as capital expenditure, capital expenditure on administration, recurrent expenditure on economic services, and recurrent expenditure on transfer services rather than spending on expenditures that substitute for private investment (crowd out) effect on private investment: such as expenditures on recurrent expenditure, recurrent expenditure on administration, recurrent expenditure on social and community services, capital expenditure on transfer, capital expenditure on economic services and capital expenditure on social and community services.

ii. The study also established the effect of Structural Adjustment Programme (SAP) on private investment. This was captured by the dummy variable D in equation 1, with

significant complementary relationship on private investment. Therefore the government should encourage its privatization programme towards achieving a very good investment climate in Nigeria.

APPENDIX;Table 1, 2, and 3.

Year	gdp	RecEx	CapEx	Gdi	Dummy	Inflation
1975	0	2734.9	3207.7	0	0	33.90
1976	24.12	3815.4	4041.3	1.43	0	21.10
1977	18.24	3819.2	5004.6	39.44	0	21.50
1978	9.58	2800	5200	9.09	0	13.30
1979	21.52	3187320	4219.5	25.93	0	11.60
1980	18.24	4805.2	10163.3	13.75	0	10.00
1981	4.05	4846.7	6567	69.7	0	21.40
1982	3.04	5506	6417.2	5.9	0	7.20
1983	8.23	4750.8	4885.7	22.23	0	23.20
1984	12.27	5827.5	4100.1	31.39	0	40.70
1985	13.89	7576.4	5464.7	3.83	0	4.70
1986	1.82	7696.9	8526.8	29.01	1	5.40
1987	52.17	15646.2	6372.5	34.16	1	10.20
1988	32.18	19409.4	834.1	15.33	1	56.00
1989	55.87	25994.2	15034.1	52.75	1	50.50
1990	23.41	36219.6	24048.6	49.57	1	7.50
1991	16.66	38243.5	28340.9	12.64	1	12.70
1992	70.63	53034.1	39763.3	56.7	1	44.80
1993	28.39	136727.1	97079.4	36.87	1	57.20
1994	31.58	89971.9	70918.3	8.94	1	57.00
1995	114.83	127629.8	121138.3	34.43	1	72.80
1996	39.8	124291.3	212926.3	43.78	1	29.30
1997	3.67	158563.5	269651.7	19.04	1	10.70
1998	3.33	178097.8	309015.6	0.27	1	7.90
1999	17.92	449662.4	498027.6	4.38	1	6.60
2000	43.45	461608.5	239450.9	42.91	1	6.90
2001	3.11	579329.1	438696.5	12.41	1	18.90
2002	46.29	696777.7	321378.1	34.28	1	12.90

2003	22.77	984277.6	241688.3	73.29	1	14.00
2004	34.45	1032800	351300	0.33	1	15.00
2005	27.7	1223700	591500	6.8	1	17.80
2006	27.39	1290202	552385.8	92.26	1	8.20
2007	11.27	1589274	759323	23.85	1	5.40
2008	17.61	2117363	1123456	6.02	1	11.60
2009	1.71	2131906	1325019	20.3	1	12.40

Source: CBN Statistical Bulletin, 2009.

References:

Ascharer, D. A. (1989a): "Does public capital crowd out private capital?". *Journal of Monetary Economics,* **24**: 171 – 188.

Asante, Y (2000): "Determinants of Private Investment Behavior: Ghana 1970 – 1991" Nairobi *AERC Research paper* No. 27.

Bairam, E. (1990): "Government size and Economic Growth: the African experience, 1960 – 1985." *Applied Economics,* **22**: 1427 – 1435.

CBN Statistical Bulletin, **18:** 2009.

Chete, L. N. and Akpokodje, G. (1997): "Micro Economic determinants of domestic private investment in Nigeria. An empirical exploration".*CBN Economic and Financial Review*,**35** (1): 43 - 57.

Chibber, A. and Palwa, S. (1994): "Investment recovery and growth in Nigeria: The Case For Debt Relief: In African Debt Burden and Economic Development" *Selected papers for the 1994 annual conference NES.*

Ekpo, A. H. (1995): "The public sector in revitalizing the Nigerian Economy." *Paper presented at the 1995 one day seminar of NES*.

Ekpo, A. H. (1996): "The public sector and Economic Growth in Nigeria". In: *Fiscal and Monetary policy during structural adjustment in Nigeria proceedings of a seminar of national policy workshop.* AETC/CBN

Erenburg, S. (1993): "The Real Effects of Public Investment on Private Investment: A Rational Expectation Model", In: *Applied Economics,* **25**: 2 - 7.

Karras, G. (1994): "Government spending and private consumption*: some international evidence". Journal of money credit and banking.* **16**: 32 - 36.

Keynes, J. M. (1936): *The general theory of employment, interest and Money*. London:

Macmillan publishers.

Mamatzakis, E. C. (1994): "The effect of public expenditure on private investment: An empirical application". *Monetary Economics*, **12**: 6 - 9.

Mankiw, M. Gregory, (1992): *Macro Economics fifth edition*. London: Worth publishers.

Monadjemi, M. (1995): "Public Expenditure and Private Investment: Evidence from the U.K and U.S.A*". Applied Economics*, **10**: 3 - 16.

Olaniyan, A (2000): "Microeconomic Determinants of domestic private investment in Nigeria." *Paper presented at the annual conference of the Nigerian Economic Society, Abuja, Nigeria.*